

C. E. Friend.

Memorandum on Acute Poliomyelitis issued by the Medical Officers of Schools Association.

Acute Anterior Poliomyelitis is an infectious disease probably due to a filterable virus which is impossible to detect by ordinary methods. Spread of infection is probably by droplets. The degree of infectivity, as shewn by declared (or paralytic) cases, is not high at Public School boy age limits (13-19). It is, however, a definitely dangerous disease, as shewn by the high mortality and severe sequelae in the declared cases. As well as these, during an epidemic there probably occur a number of abortive cases (with no paralysis), which are shewn only by "febricula" frequently with nasopharyngeal or gastro-intestinal symptoms; declared (or paralytic cases) are few in number in comparison with the former group.

The Incubation Period is probably from 3 to 11 days—possibly up to two weeks.

Diagnosis is extremely difficult in early cases and in non-epidemic periods.

Serum Treatment. Human convalescent serum, if given in the pre-paralytic stage, is probably the only useful serum, but conclusive evidence of its curative value has not, so far, been established. After Paralysis has appeared, this serum is useless and in some cases has seemed to be dangerous. There is no satisfactory evidence that any other type of serum is of any value. Such serum is probably obtainable at the following:—

The Lister Institute, London ;

Burroughs & Wellcome Research Laboratories, Langley
Court, Beckenham ;

The Headington Orthopaedic Hospital, Oxford ;
and probably other Orthopaedic centres.

Spread of infection is undoubtedly caused by carriers. These may be mild missed cases or healthy persons. The detection of these is, at present, not a practical matter in a School community.

Procedure Recommended.

A. ON THE OCCURRENCE OF ONE CASE.

(1) *Notification to parents of affected pupil.*

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(2) *Notification to parents of other pupils.* We have not advocated this in the past, but in view of the public interest now aroused, we consider it, as a rule, advisable.

(3) *Isolation of Patient.* The patient should be nursed in a separate ward by a nurse specially detailed for this duty.

(4) *Contacts.* In our experience the complete isolation of contacts is impossible, and we consider that a partial attempt to do this is useless, since it must leave as many loopholes as it stops. Supervision of direct contacts, without isolation, so far as they can be ascertained, is possible and may be effective. Such direct contacts would include (1) near bedfellows, (2) study companions, (3) neighbours in Chapel, Form, or at Meals, (4) known friends. Any case among these found to present symptoms, *e.g.*, fever or catarrh, would of course be isolated.

An open-air life, free ventilation of all quarters and extra spacing out of beds is advisable.

B. ON THE OCCURRENCE OF 2 OR MORE CASES IN THE SCHOOL.

(1) *A second notification to all parents* should be sent, pointing out there has been a second case and that all possible precautions are being taken, and that, speaking generally, experience in the past has shewn that the risk in removing boys from a well-ordered school is greater than leaving them there. It should be pointed out that 70% of all recorded cases occur in children under the age of 10; that so far as has been ascertained there have been only 32 cases occurring during the last 20 years in a Public School population of over 20,000 pupils; that the number of cases occurring in any one epidemic has never exceeded 4, and only three times has it exceeded two cases. On these grounds we do not advocate the policy of School closure as a whole, nor would we encourage the withdrawal of individual boys at parental request. If, however, the removal of boys under these circumstances is requested, the responsibility ought to be directly on the parent and the removal should be associated with:—

Individual isolation of the boy removed, especially from young children.

Notification to the local Medical Officer of Health by the School Authorities.

Notification to the family doctor by the parent.

(2) *Prophylactic measures.*

Swabbing the throat for the purpose of discovering carriers is, of course, useless.



Gargling as a means of preventing spread of infection. Probably mass gargling as carried out in the majority of Schools is a useless proceeding from the point of view of prevention, and may be even favourable to its spread.

Nasal douching as a mass proceeding is also probably useless, and possibly dangerous.

Disinfection. Unnecessary in regard to contacts. Subsequent disinfection of the patient, his belongings and surroundings, is probably best obtained by the lavish use of soap and water and, where possible, fresh air and sunlight.

Transport. In the event of healthy boys being removed home at their parents request, no special precautions are required ; they may travel by ordinary trains.

Conclusions.

There is no record of a large epidemic of Polio-myelitis in any Public School during the past 20 years. The largest number occurring in any one school in any epidemic is 4. The total number of reported cases, so far as we have been able to ascertain, is 32, among a population at risk of over 20,000 pupils. These 32 cases occurred in 22 terms, the case incidence being:—

	<i>Term.</i>	<i>Result.</i>
School C.—4 cases.	Winter, 1918.	1 death, 1 recovery, 2 partial paralysis.
„ A.—3 „	„ 1919.	2 recovered, 1 partial paralysis.
„ B.—3 „	„ 1926.	3 recovered.
„ J.—2 „	„ 1926.	1 death, 1 recovered.
„ A.—2 „	„ 1932.	1 recovered, 1 partial paralysis.
„ K.—2 „	„ 1932.	2 recovered.
16 single case epidemics		2 deaths, 14 recovered.

In no case would closure have prevented any of the 4 fatal cases, nor any of the subsequent ones, as they all occurred within the incubation period from the first case, i.e., they were infected either by, or at the same time, as the first case, before this latter was diagnosed.

In Regard to Treatment.

In the 11 schools concerned, no preventative methods beyond isolation of the patient were adopted in 7. In one school where 1 case occurred, isolation of the patient and attendants was combined with nasal douching of the whole school daily for a

fortnight without apparent harm. In a record of at least 20 epidemics occurring in 11 schools, dispersal of the school has only been resorted to twice. Of the 18 or more occasions in which the school was not disbanded, 11 epidemics were confined to a single case, the distribution of the remainder being as stated in the table above. It is on these facts that we see no reason for recommending closure of the whole School when a case, or cases, of Poliomyelitis occur, and we consider that, speaking generally, the risk involved in removing a boy from a well-ordered School is probably greater than leaving him there.

We consider that Sect. XX., p. 19, of the Code of Rules for the Prevention of Communicable Diseases in Schools still covers all the possibilities.

“The dispersion of a School on account of an outbreak of infectious disease is always a serious step to take, and should very rarely be required. It may lead to a wide-spread distribution of the disease.

“In the opinion of the Association a serious outbreak of an infectious disease in a school affords a sufficient justification for the temporary removal of healthy children by their parents or guardians, should they see fit to take this step; but the onus of removing the pupils should rest with the parents, and not with the School Authorities. The latter should rarely go beyond advising parents to take away their children.

“Each case, however, must obviously be decided on its own merits, and if CLOSURE is considered necessary, such a step should only be taken after consultation with the local Medical Officer of Health and the Ministry of Health.

“The parents should be informed at once by the Headmaster of all the circumstances of the case, and of the measures being taken to prevent the spread of the disease, together with precise advice as to the precautions to be observed with regard to Isolation and Quarantine; such information should be handed by the Parent to the local (home) Medical Officer of Health.

“If pupils are to be sent home, it is necessary to give the parents sufficient time to make the needful arrangements for isolating them; parents should be informed by the School Authorities of the period of incubation of the illness.”